

Government of Pakistan
National Vocational and Technical Training Commission

Prime Minister's Hunarmand Pakistan Program

"Skills for All"



Course Contents / Lesson Plan

Course Title: Citrus Processing

Duration: 6 Months

Revised Edition

Trainer Name	
Course Title	Citrus Processing
Objectives and Expectations	<p style="text-align: center;">Employable skills and hands-on practice for Citrus Processing</p> <p>This course is designed to generate a skilled manpower for citrus processing industry. Despite of sufficient processing facility export of processed fruit have very low impact in country's export. This course will facilitate the citrus processing stakeholders for having skilled labor to process fruit for better market and handsome output. This course will minimize harvest and post-harvest losses which will improve quality, increasing the export and adding in revenue. This course will improve the expertise of citrus processing workers engaged in citrus harvesting, receiving from farm, its storage, tagging, quality inspection, processing, grading, packing, labeling cold storage and loading for shipment. The objectives of this course are:</p> <ul style="list-style-type: none"> • To develop technically well-equipped trained man power to meet the demands of citrus industry in all processing stages. • To enhance revenue of processing industry by minimizing the fruit losses and improving citrus export. <p><u>Main Expectations:</u></p> <p>In short, the course under reference should be delivered by professional instructors in such a robust hands-on manner that the trainees are comfortably able to employ their skills for earning money (through wage/self-employment) at its conclusion.</p> <p>This course thus clearly goes beyond the domain of the traditional training practices in vogue and underscores an expectation that a market-centric approach will be adopted as the main driving force while delivering it. The instructors should therefore be experienced enough to be able to identify the training needs for the possible market roles available out there. Moreover, they should also know the strengths and weaknesses of each trainee to prepare them for such market roles during/after the training.</p> <ol style="list-style-type: none"> i. Specially designed practical tasks to be performed by the trainees have been included in the Annexure-I to this document. The record of all tasks performed individually or in groups must be preserved by the management of the training Institute clearly labeling name, trade, session, etc so that these are ready to be physically inspected/verified through monitoring visits from time to time. The weekly distribution of tasks has also been indicated in the weekly lesson plan given in this document. ii. To materialize the main expectations, a special module on <u>Job Search & Entrepreneurial Skills</u> has been included in the latter part of this course (5th & 6th month) through which, the trainees will be made aware of the Job search techniques in the local as well as international job markets (Gulf countries). Awareness around the visa process and immigration laws of the most favored labor destination countries also form a part of this module. Moreover, the trainees would also be encouraged to venture into self-employment and exposed to the main

requirements in this regard. It is also expected that a sense of civic duties/roles and responsibilities will also be inculcated in the trainees to make them responsible citizens of the country.

iii. A module on **Work Place Ethics** has also been included to highlight the importance of good and positive behavior in the workplace in the line with the best practices elsewhere in the world. An outline of such qualities has been given in the Appendix to this document. Its importance should be conveyed in a format that is attractive and interesting for the trainees such as through PPT slides +short video documentaries. Needless to say that if the training provider puts his heart and soul into these otherwise non-technical components, the image of the Pakistani workforce would undergo a positive transformation in the local as well as international job markets.

To maintain interest and motivation of the trainees throughout the course, modern techniques such as:

- Motivational Lectures
- Success Stories
- Case Studies

These techniques would be employed as an additional training tool wherever possible (these are explained in the subsequent section on Training Methodology).

Lastly, evaluation of the competencies acquired by the trainees will be done objectively at various stages of the training and a proper record of the same will be maintained. Suffice to say that for such evaluations, practical tasks would be designed by the training providers to gauge the problem-solving abilities of the trainees.

(i) **Motivational Lectures**

The proposed methodology for the training under reference employs motivation as a tool. Hence besides the purely technical content, a trainer is required to include elements of motivation in his/her lecture. To inspire the trainees to utilize the training opportunity to the full and strive towards professional excellence. Motivational lectures may also include general topics such as the importance of moral values and civic role & responsibilities as a Pakistani. A motivational lecture should be delivered with enough zeal to produce a deep impact on the trainees. It may comprise of the following:

- Clear Purpose to convey the message to trainees effectively.
- Personal Story to quote as an example to follow.
- Trainees fit so that the situation is actionable by trainees and not represent a just idealism.
- Ending Points to persuade the trainees on changing themselves.

A good motivational lecture should help drive creativity, curiosity, and spark the desire needed for trainees to want to learn more.

The impact of a successful motivational strategy is amongst others commonly visible in increased class participation ratios. It increases the trainees' willingness to be engaged on the practical tasks for a longer time without boredom and loss of interest because they can see in their mind's eye where their hard work would take them in short (1-3 years); medium (3 -10 years) and

long term (more than 10 years).

As this tool is expected that the training providers would make arrangements for regular well planned motivational lectures as part of a coordinated strategy interspersed throughout the training period as suggested in the weekly lesson plans in this document.

Course-related motivational lectures online link is available in **Annexure-II**.

(ii) Success Stories

Another effective way of motivating the trainees is using Success Stories. Its inclusion in the weekly lesson plan at regular intervals has been recommended till the end of the training.

A success story may be disseminated orally, through a presentation, or using a video/documentary of someone that has risen to fortune, acclaim, or brilliant achievement. A success story shows how a person achieved his goal through hard work, dedication, and devotion. An inspiring success story contains compelling and significant facts articulated clearly and easily comprehensible words. Moreover, it is helpful if it is assumed that the reader/listener knows nothing of what is being revealed. The optimum impact is created when the story is revealed in the form of:-

- Directly in person (At least 2-3 cases must be arranged by the training institute)
- Through an audio/ videotaped message (2-3 high-quality videos must be arranged by the training institute)

It is expected that the training provider would collect relevant high-quality success stories for inclusion in the training as suggested in the weekly lesson plan given in this document.

Suggestive structure and sequence of a sample success story and its various shapes can be seen in **Annexure III**.

(iii) Case Studies

Where a situation allows, case studies can also be presented to the trainees to widen their understanding of the real-life specific problem/situation and to explore the solutions.

In simple terms, the case study method of teaching uses a real-life case example/a typical case to demonstrate a phenomenon in action and explain theoretical as well as practical aspects of the knowledge related to the same. It is an effective way to help the trainees comprehend in depth both the theoretical and practical aspects of the complex phenomenon in depth with ease. Case teaching can also stimulate the trainees to participate in discussions and thereby boost their confidence. It also makes the classroom atmosphere interesting thus maintaining the trainee interest in training till the end of the course.

Depending on suitability to the trade, the weekly lesson plan in this document may suggest case studies be presented to the trainees. The trainer may adopt a PowerPoint presentation or video format for such case studies whichever is deemed suitable but only those cases must be selected that are relevant and of a learning value.

The Trainees should be required and supervised to carefully analyze the cases.

	<p>For this purpose, they must be encouraged to inquire and collect specific information/data, actively participate in the discussions, and intended solutions to the problem/situation.</p> <p>Case studies can be implemented in the following ways: -</p> <ol style="list-style-type: none"> i. A good quality trade-specific documentary (At least 2-3 documentaries must be arranged by the training institute) ii. Health & Safety case studies (2 cases regarding safety and industrial accidents must be arranged by the training institute) iii. Field visits (At least one visit to a trade-specific major industry/ site must be arranged by the training institute)
Entry-level of trainees	Matric
Learning Outcomes of the course	<p>By the end of this course, students will be able to:</p> <ul style="list-style-type: none"> • Harvest citrus fruit with traditional and mechanical methods • Handle storage and management of product at farm level • Process citrus fruit according to latest industry demands • Washing and cleaning of fruits • Sorting and grading operation • Process fruits for juices and beverages • Preserve fruit for increase in shelf life • Fruit packaging and cold storage handling • Value addition techniques for citrus product • Loading and unloading of fruit
Course Execution Plan	<p>The total duration of the course: 6 months (26 Weeks) Class hours: 4 hours per day Theory: 20% Practical: 80% Weekly hours: 20 hours per week Total contact hours: 520 hours</p>
Companies offering jobs in the respective trade	<ol style="list-style-type: none"> 1. Fruit processing industry 2. Commercial citrus exporters 3. Fruit production farms 4. Beverages industry 5. Mitchel's 6. Nestle 7. Fruit pulp industry 8. Government citrus research and production farms
Job Opportunities	<p>All over the world there is a high demand in the fruit processing industry. With the help of this course, we will be able to give technical trainings for citrus processing to our youth. There are also opportunities for start-up entrepreneurship due to the high demand in the market in following designated jobs;</p> <ul style="list-style-type: none"> • Fruit pickers/fruit harvesters

	<ul style="list-style-type: none"> • Processing plant supervisor • Quality control supervisor • Fruit quality Inspectors • Pickles production experts • Extractor operator • Juice/Pulp fillers • Packers
No of Students	25
Learning Place	Classroom / Lab
Instructional Resources	<ol style="list-style-type: none"> 1. Orange book Tetra Pak Pakistan 2. Citrus fruit processing Zeki berk 3. Citrus processing Dan A Kimbal 4. Citrus: Importance, Processing and problems Dr mujahid Ali 5. Citrus fruit cultivation and processing Bakhabrkisan.com 6. Orange processing and packing YouTube video by Nadeem Vlogger

MODULES

Scheduled Weeks	Module Title	Learning Units	Remarks
Week 1	<p>Orientation/Course Introduction</p> <p>Introduction to citrus processing industry</p>	<ul style="list-style-type: none"> ▪ Motivational Lecture (<i>For further detail please see Page No: 3& 4</i>) ▪ Job market ▪ Course Applications ▪ Institute/work ethics <p>Student will be introduced with</p> <ul style="list-style-type: none"> ▪ Identification of Citrus varieties ▪ Citrus harvesting methods ▪ Impact of Citrus processing industry in GDP ▪ Identification for tools and implements used in citrus processing 	<p>Home Assignment</p> <ul style="list-style-type: none"> • Task 1 • Task 2 • Task 3 <p><i><u>Details may be seen at Annexure-I</u></i></p>
Week 2	<p>Perform citrus harvesting operations</p>	<ul style="list-style-type: none"> ▪ Success stories (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Identify harvesting tools ▪ Perform harvesting methods of citrus <ul style="list-style-type: none"> ▪ Mechanical harvesting ▪ Manual harvesting ▪ Perform temporary storage and handling of harvested fruit under field conditions 	<ul style="list-style-type: none"> • Task 4 <p><i><u>Details may be seen at Annexure-I</u></i></p>
Week 3	<p>Receive citrus fruit at processing house</p>	<p>1) Motivational Lecture(<i>For further detail please see Page No: 3& 4</i>)</p> <p>Students will be introduced to</p> <ul style="list-style-type: none"> ▪ Safety guidelines for safe unloading of fruits ▪ Prepare site for safe unloading ▪ Perform pest control measures ▪ Perform unloading of fruits according to standard methods ▪ Maintain sanitation at workplace according to guidelines ▪ Verify materials according to delivery challan ▪ Inspect quality according to work instructions ▪ Prepare and maintain records of received materials 	<ul style="list-style-type: none"> • Task 5 <p><i><u>Details may be seen at Annexure-I</u></i></p>
Week 4	<p>Perform temporary storage at factory</p>	<ul style="list-style-type: none"> ▪ Success stories (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to learn:</p> <ul style="list-style-type: none"> ▪ Safety guidelines for safe storage of fruits 	<ul style="list-style-type: none"> • Task 6 <p><i><u>Details may be seen at Annexure-I</u></i></p>

		<ul style="list-style-type: none"> ▪ Prepare storage place according to standard work instructions ▪ Perform the staking and temporary storage of fruit baskets based on grades ▪ Verify the document collected from farm supervisor or supplier ▪ Perform segregation of certified and non-certified fruit ▪ Perform labeling of received fruits according to work instructions ▪ Observe food safety guidelines at this step 	<p style="background-color: #008000; color: white; padding: 5px; text-align: center;">▪ Monthly Test 1</p>
Week 5	Perform quality assurance operations	<ul style="list-style-type: none"> ▪ Motivational Lecture(<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Identify and select certified citrus processing facilities with international standards ▪ Recognize the citrus quality parameters and standards ▪ Identify important processing steps critical for quality assurance ▪ Identify quality characteristics of inputs ▪ Investigate the time frame of each processing step ▪ Examine physicochemical sensory characteristics of citrus ▪ Develop the quality parameters checklist of fruit for export. ▪ Carry out the standard procedures of processing step ▪ Maintain stock register of inputs in processing hall ▪ Use of first aid kit in emergency 	<p style="text-align: center;">• Task 7</p> <p style="text-align: center;"><u><i>Details may be seen at Annexure-I</i></u></p>
Week 6	Ensure Fruit Quality at Critical Control Point	<ul style="list-style-type: none"> ▪ Success stories (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Identify the critical points involved in citrus quality ▪ Identify critical control points (CCP) in whole citrus processing line ▪ Explain control limits (CLs) of each CCP ▪ Follow instructions of quality fruit chart ▪ Ensure quality parameters for export markets ▪ Prepare and maintain data checklists of all CCPs and CLs ▪ Monitor the CCPs and CLs during processing of citrus fruit ▪ Take corrective action of any violation of CCPs 	<p style="text-align: center;">• Task 8</p> <p style="text-align: center;"><u><i>Details may be seen at Annexure-I</i></u></p>

<p>Week 7</p>	<p>Perform cleaning and washing of fruits</p>	<ul style="list-style-type: none"> ▪ Motivational Lecture(<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Prepare for cleaning of received fruits for processing. ▪ Arrange materials for cleaning ▪ Perform manual cleaning ▪ Perform mechanical cleaning ▪ Perform de-stemming operations ▪ Arrange and prepare solution for washing according to guidelines ▪ Identification of washer and introduction of CCP (Critical Control Point) on this chamber because of using different types of fungicide and chlorine for disinfection and cleaning of the fruit ▪ Introduction of (CL) critical limits of each CCP to avoid any deterioration of fruit quality and following the standards of using any chemical ▪ Perform washing operations according to standard work instructions ▪ Ensure safety and guidelines according to work standards 	<p>• Task 9</p> <p><u><i>Details may be seen at Annexure-I</i></u></p>
<p>Week 8</p>	<p>Perform sorting operations</p>	<ul style="list-style-type: none"> ▪ Success stories (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Arrange materials for fruit sorting ▪ Demonstrate the quality benefits of natural drying of fruit. ▪ Introduction of blowers after washing chamber to carry out the natural drying in spite of raising temperature of drying burner. ▪ Perform sorting of fruit according to guidelines ▪ Select required fruits according to instructions ▪ Perform operation through fruit sorter mechanically ▪ Perform sorting according to variety, size, quality, color, maturity and other standards required by the company ▪ Maintain records ▪ Follow health and safety guidelines 	<p>• Task 10</p> <p><u><i>Details may be seen at Annexure-I</i></u></p> <p>▪ Monthly Test 2</p>

<p>Week 9</p>	<p>Perform grading of citrus fruits</p>	<ul style="list-style-type: none"> ▪ Motivational Lecture(<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Prepare for citrus grading operations which include <ul style="list-style-type: none"> - Arrangement of materials for grading - Collect information for grading requirements - Assimilate information for production requirement ▪ Perform grading operation manually ▪ Perform grading operations mechanically ▪ Ensure grading standards according to Company requirement ▪ Maintain Records ▪ Maintain health and safety guidelines 	<p>•Task 11</p> <p><i><u>Details may be seen at Annexure-I</u></i></p>
<p>Week 10</p>	<p>Perform fruit preservation operations</p>	<ul style="list-style-type: none"> • Success stories (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Prepare preservatives for citrus fruits according to work instructions ▪ Perform waxing operations according to standard method ▪ Perform preservation of fruit through radiations method ▪ Apply chemicals to save fruits form different pest ▪ Maintain quality of fruit according to work instructions ▪ Maintain records ▪ Ensure health and safety guidelines 	<p>•Task 12</p> <p><i><u>Details may be seen at Annexure-I</u></i></p>
<p>Week 11</p>	<p>Perform packaging of fruits for market</p>	<ul style="list-style-type: none"> ▪ Motivational Lecture (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Select packaging material according to requirement ▪ Arrange fruits for packaging ▪ Perform manual packing of fruits ▪ Operate packaging machines ▪ Perform stacking according to work instructions ▪ Perform labeling of packed materials ▪ Maintain records ▪ Follow health and safety standards involved in packaging process 	<p>• Task 13</p> <p><i><u>Details may be seen at Annexure-I</u></i></p>

Week 12	Maintain storage of citrus fruits	<ul style="list-style-type: none"> ▪ Success stories (For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Prepare site for storage according to standard requirement ▪ Perform sanitation operations for safe storage ▪ undertake fumigations for pest control ▪ maintain cold storage standard conditions for fruit storage ▪ Perform stacking in cold houses ▪ Monitor temperature and humidity level in cold houses ▪ Follow work guidelines of storage ▪ Maintain records ▪ Observe health and safety standards in storage operations 	<p>• Task 14</p> <p><u>Details may be seen at Annexure-I</u></p>
	Start Preparing your portfolio	<ul style="list-style-type: none"> ▪ Motivational Lecture(For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> • the concept of design portfolios • the concept of present design work/projects in a professional manner • websites that provide free portfolio hosting such as Behance and Dribbble • creating a portfolio • how to select work for presenting in your portfolio 	
	Build your CV	<p>Download professional CV template from any good site (https://www.coolfreecv.com or relevant)</p> <ul style="list-style-type: none"> • Add Personal Information • Add Educational details • Add Experience/Portfolio • Add contact details/profile links 	
Week 13	Midterm		
Week 14	Extract juice from citrus	<ul style="list-style-type: none"> ▪ Success stories (For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Arrange materials required for juice extractions ▪ Perform cleaning of equipment according to standards ▪ Arrange fruit according to requirement ▪ Perform peeling operations according to work instructions 	<p>• Home Assignment</p>

		<ul style="list-style-type: none"> ▪ Perform fruit sizing operations ▪ Perform feeding of citrus fruit In extraction machines or line ▪ Perform extraction through squeezer type extractor ▪ Perform extraction through Reamer type extractor ▪ Operate juice extractors according to given instructions ▪ Perform quality control checks ▪ Maintain clean and healthy workplace ▪ Maintain records ▪ Observe health and safety guidelines ▪ Dispose of waste according to work instructions ▪ Perform storage according to standard requirement 	<p>• Task 15</p> <p><u>Details may be seen at Annexure-I</u></p>
Week 15	Perform clarification of extracted juice	<ul style="list-style-type: none"> ▪ Motivational Lecture (For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Arrange materials according to requirement ▪ Feed pulpy juice to finisher according to standard guidelines ▪ Centrifuge the pulp for clarifications according to work instructions ▪ Maintain chiller for storage ▪ Transfer juice to chiller according to standards ▪ Maintain records ▪ Observe health and safety guidelines ▪ Dispose of waste according to work instructions ▪ Perform storage according to standard requirement 	<p>• Task 16</p> <p><u>Details may be seen at Annexure-I</u></p>
	Introduction to Freelancing	<ul style="list-style-type: none"> ▪ Motivational Lecture (For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> • the concept of freelancing • how to become freelance and create a sustainable income • pros and cons of freelancing • the ethical and professional way of becoming a productive freelancer • resources available for freelancing in the field of design • how to join freelancing sites 	

		<ul style="list-style-type: none"> the process of creating a freelancing profile 	
	Create an account profile on Fiverr (at least two gigs) and Upwork	<p>Create an account by following these steps:</p> <p>Step 1: Personal Info Step 2: Professional Info Step 3: Linked Accounts Step 4: Account Security</p>	
Week 16	NFC (Not from concentrate) Production	<ul style="list-style-type: none"> Success stories (For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> Need for the NFC production. Perform pre-checks for machinery Perform oil reduction process according to standard method Centrifuge the product for Deoiling with centrifuge machines Perform Primary pasteurization according t standard instructions Undertake Deaeration according to requirement Perform storage according to Long term frozen storage techniques Undertake storage in Aseptic storage condition Process juice for NFC reprocessing according to standard method Maintain health and safety guidelines 	<ul style="list-style-type: none"> Task 17 <p><u>Details may be seen at Annexure-I</u></p>
Week 17	Concentrated production of citrus juice	<ul style="list-style-type: none"> Motivational Lecture (For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> Perform pre checks for required machinery Collect clarified juice Perform evaporation according to standard method Essence to essence recovery Condensate to fruit washing Feeding in concentrate blend tanks Perform cooling Store juice according to frozen concentrated storage technique Maintain records Adhere health and safety guidelines 	<ul style="list-style-type: none"> Task 18 <p><u>Details may be seen at Annexure-I</u></p> <p>Monthly Test 3</p>

<p>Week 18</p>	<p>Prepare oil emulsions from citrus by product</p>	<ul style="list-style-type: none"> ▪ Success stories (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Principle of oil emulsions ▪ Collect material from juice extractors ▪ Process obtained materials in concentrator according to standard guidelines ▪ Polisher function in oil emulsions preparation ▪ Process of winterization storage ▪ Storage requirement for oil emulsions ▪ Health and safety guidelines involved in process 	<p>•Task 19 <i><u>Details may be seen at Annexure-I</u></i></p>
<p>Week 19</p>	<p>Prepare animal feed from citrus waste</p>	<ul style="list-style-type: none"> ▪ Motivational Lecture (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Principles and practices involved in feed making process ▪ Collection of citrus waste (Peels, rag and seed) ▪ Process of pressers ▪ Function of dryer ▪ Preparation of feed according to standard method 	<p>•Task 20 <i><u>Details may be seen at Annexure-I</u></i></p>
<p>Week 20</p>	<p>Perform packaging</p>	<ul style="list-style-type: none"> ▪ Success stories (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> • Principles and practices involved in packaging • Collection of packaging material • Selection of packaging material • Perform bottling of juices • Perform tetra pack packaging • Maintain records • Perform labeling of batch • Storage of product according to work instructions 	<p>•Task 21 <i><u>Details may be seen at Annexure-I</u></i></p>
<p>Week 21</p>	<p>Employable Project/ Assignment (6 weeks) i.e. 21-26 besides regular classes. OR On the job training (2 weeks)</p>	<ul style="list-style-type: none"> • Guidelines to the Trainees for selection of students employable project like final year project (FYP) • Assign Independent project to each Trainee • A project-based on trainee's aptitude and acquired skills. • Designed by keeping in view the emerging trends in the local market as well as across the globe. 	<p>•Task 22 <i><u>Details may be seen at Annexure-I</u></i></p>

		<ul style="list-style-type: none"> • The project idea may be based on Entrepreneur. • Leading to successful employment. • The duration of the project will be 6 weeks • Final viva/assessment will be conducted on project assignments. • At the end of the session, the project will be presented in a skills competition • The skill competition will be conducted on zonal, regional, and National levels. • The project will be presented in front of Industrialists for commercialization • The best business idea will be placed in the NAVTTC business incubation center for commercialization. <p style="text-align: center;">OR</p> <p>On the job training for 2 weeks:</p> <ul style="list-style-type: none"> • Aims to provide 2 weeks of industrial training to the Trainees as part of the overall training program • Ideal for the manufacturing trades • As an alternative to the projects that involve expensive equipment • Focuses on increasing Trainee's motivation, productivity, efficiency, and quick learning approach. 	
Week 22	Project		
	How to search and apply for jobs in at least two labor marketplace countries (KSA, UAE, etc.)	<ul style="list-style-type: none"> • Browse the following website and create an account on each website <ul style="list-style-type: none"> ✓ Bayt.com – The Middle East Leading Job Site ✓ Monster Gulf – The International Job Portal ✓ Gulf Talent – Jobs in Dubai and the Middle East • Find the handy 'search' option at the top of your homepage to search for the jobs that best suit your skills. • Select the job type from the first 'Job Type' drop-down menu, next, select the location from the second drop- down menu. 	<p style="text-align: center;">• Task 23 <i><u>Details may be seen at Annexure-I</u></i></p>

		<ul style="list-style-type: none"> • Enter any keywords you want to use to find suitable job vacancies. • On the results page you can search for part-time jobs only, full-time jobs only, employers only, or agencies only. Tick the boxes as appropriate to your search. • Search for jobs by: <ul style="list-style-type: none"> ✓ Company ✓ Category ✓ Location ✓ All jobs ✓ Agency ✓ Industry 	
Week 23	Maintain CA Storage	<ul style="list-style-type: none"> ▪ Success stories (For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> • Principles of CA storage • Maintenance of CA storage according to work instructions • Requirements of CA storage • Periodic Sampling for quality checks • Benefits of CA comparing with cold storage • Storage of product in CA according to standard method • Health and safety guidelines involved in CA storage practice 	<ul style="list-style-type: none"> • Task 24 <p><u>Details may be seen at Annexure-I</u></p>
Week 24	Prepare citrus pickles for value edition	<ul style="list-style-type: none"> ▪ Success stories (For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> • Arrange materials for pickle preparation • Washing and cleaning of fruits • Perform peeling and slicing of fruit according to recommendation • Perform boiling according to standard requirement • Perform drying manually or mechanically • Mix oil and other species if required according to standard instructions • Process for fermentation according to requirement • Perform packaging • Ensure Health and safety guidelines involved in pickle production 	<ul style="list-style-type: none"> • Task 25 <p><u>Details may be seen at Annexure-I</u></p>

<p>Week 25</p>	<p>Prepare citrus marmalade, jam and jelly</p>	<ul style="list-style-type: none"> • Success stories (For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> • Arrange materials according to requirement • Perform washing of fruits • Understand peeling of citrus fruit • Perform slicing operation • Perform extraction of pulp • Undertake boiling according to standard requirement • Perform cooling and waxing operation • Perform packaging according to requirement 	<ul style="list-style-type: none"> • Task 26 <p><u>Details may be seen at Annexure-I</u></p>
<p>Week 26</p>	<p>Entrepreneurship and Final Assessment in project</p>	<ul style="list-style-type: none"> • Success stories (For further detail please see Page No: 3& 4) • Job Market Searching • Self-employment • Introduction • Fundamentals of Business Development • Entrepreneurship • Startup Funding • Business Incubation and Acceleration • Business Value Statement • Business Model Canvas • Sales and Marketing Strategies • How to Reach Customers and Engage • Stakeholders Power Grid • RACI Model, SWOT Analysis, PEST Analysis • SMART Objectives • OKRs • Cost Management (OPEX, CAPEX, ROCE, etc.) 	<p>Final Assessment</p>
<p>Final Assessment</p>			

Tasks For Certificate in Advanced Welding

Task No.	Task	Description	Week
1.	Find the career path	<ul style="list-style-type: none"> Prepare a career path related to your course and also highlight the emerging trends in the local as well as international market 	Week 1
2.	Work Ethics	<ul style="list-style-type: none"> Generate a report on Institute work ethics and professionalism related to your course 	
3.	Identify hazards in processing plant	<ul style="list-style-type: none"> Prepare a report of at least 10 safety practices and processing plant related hazards 	
4.	Perform mechanical harvesting of citrus fruit	<ul style="list-style-type: none"> Arrange tools and equipment according to requirement Perform pre-checks of machinery Operate required machinery according to standard protocols Adhere health and safety guidelines 	Week-2
5.	Perform fumigation of site	<ul style="list-style-type: none"> Arrange tools and equipment according to requirement Perform pre-checks of fumigation machine Prepare solution according to instructions Operate required machinery according to standard protocols Adhere health and safety guidelines 	Week 3
6.	Perform staking through fork lifter	<ul style="list-style-type: none"> Arrange tools and equipment according to requirement Perform pre-checks of fork lifter Operate fork lifter and perform fruit basket stacking according to standard protocols Adhere health and safety guidelines 	Week 4
7.	Prepare quality parameter chart	<ul style="list-style-type: none"> Arrange materials according to requirement Enlist quality control parameter of each stage 	Week 5
8.	Prepare report on critical control point	<ul style="list-style-type: none"> Enlist various critical control points of each stage Prepare checklist for each CCP Assimilate information about follow up of each CCP Prepare report according to given format 	Week 6
9.	Perform mechanical washing of citrus fruit	<ul style="list-style-type: none"> Arrange tools and equipment according to requirement Perform pre-checks of machinery Prepare washing solution according to 	

		<ul style="list-style-type: none"> given instructions Perform washing of fruit according to standard method Adhere health and safety guidelines 	Week 7
10.	Perform sorting of required fruit according to physiological damages	<ul style="list-style-type: none"> Arrange tools, equipment and materials according to requirement Understand physiological damages Enlist damages type Check damages intensity Perform sorting according to standard requirement Adhere health and safety guidelines 	Week 8
11.	Describe various grades of citrus fruit	<ul style="list-style-type: none"> Identify different marketing grades of citrus fruit Prepare a chart for different market grade of citrus fruit 	Week 9
12.	Perform waxing of citrus fruit	<ul style="list-style-type: none"> Arrange tools and equipment according to requirement Prepare waxing material Apply waxing material according to work instructions Adhere health and safety guidelines 	Week 10
13.	Perform packaging of graded fruit	<ul style="list-style-type: none"> Arrange tools and equipment according to requirement Perform pre-checks of machinery Calculate packaging requirement Perform packaging according to requirement Adhere health and safety guidelines 	Week 11
14.	Prepare checklist of Cold storage activities	<ul style="list-style-type: none"> Prepare a checklist for daily/periodic monitoring of cold storage management like: <ul style="list-style-type: none"> ➤ Humidity ➤ Temperature ➤ Sanitation ➤ Fumigation ➤ Electricity appliances ➤ Fuel etc. 	Week 12
15.	Perform extraction of juice through squeezer method	<ul style="list-style-type: none"> Arrange tools and equipment according to requirement Perform pre-checks of machinery Perform extraction of fruit pulp according to given instructions Operate required machinery according to standard protocols Adhere health and safety guidelines 	Week 14
16.	Centrifuge pulp for processing	<ul style="list-style-type: none"> Perform pre-checks of machinery Arrange fruit pulp for centrifugation Feed pulp and set requirement of fumigation Perform centrifugation of fruit pulp according to given instructions 	

		<ul style="list-style-type: none"> Operate required machinery according to standard protocols Adhere health and safety guidelines 	Week 15
17.	Undertake pasteurization of pulp	<ul style="list-style-type: none"> Arrange tools and equipment according to requirement Perform pasteurization of fruit pulp according to given instructions Adhere health and safety guidelines 	Week 16
18.	Prepare flow diagram for concentrated juice production	<ul style="list-style-type: none"> Prepare a flow diagram containing of all steps involved in concentrated juice production according to standard method 	Week 17
19.	Prepare flow chart for oil extraction from citrus by product	<ul style="list-style-type: none"> Prepare a flow chart containing all steps involved in oil extraction from citrus fruit waste product according to standard method 	Week 18
20.	Perform drying of citrus waste	<ul style="list-style-type: none"> Arrange tools and equipment according to requirement Collect citrus waste from processing unit Perform drying of citrus waste according to given instructions Adhere health and safety guidelines 	Week 19
21.	Perform tetrapak packing of juice	<ul style="list-style-type: none"> Calculate material requirement for packaging according to production demand Arrange tools and equipment according to requirement Perform pre-checks of required machines Perform packaging according to given instructions Adhere health and safety guidelines 	Week 20
22.	Build your CV	<p>Download professional CV template from any good site (https://www.coolfreecv.com or relevant)</p> <ul style="list-style-type: none"> Add Personal Information Add Educational details Add Experience/Portfolio Add contact details/profile links 	Week 21-26
23.	Create an account profile on Fiverr (at least two gigs) and Up-work	<p>Create an account by following these steps:</p> <p>Step 1: Personal Info Step 2: Professional Info Step 3: Linked Accounts Step 4: Account Security</p>	Week 21-26
24.	Prepare CA maintenance chart	<ul style="list-style-type: none"> Identify CA maintenance requirement Prepare comprehensive monitoring chart according to maintenance requirement 	Week 23
25.	Prepare lemon pickle	<ul style="list-style-type: none"> Arrange tools and equipment according to requirement Process citrus fruit for pickle production 	Week 24

		<p>according to standard method</p> <ul style="list-style-type: none"> • Mix fruit and allow fermentation according to standard requirement • Collect Adhere health and safety guidelines 	
26.	Prepare marmalade	<ul style="list-style-type: none"> • Arrange tools and equipment according to requirement • Process citrus fruit for marmalade production according to standard method • Perform extraction of pulp • Process pulp according to standard method for marmalade production • Collect Adhere health and safety guidelines 	Week 25
27.	How to search and apply for jobs in at least two labor marketplace countries (KSA, UAE, etc.)	<ul style="list-style-type: none"> • Browse the following website and create an account on each website <ul style="list-style-type: none"> ▪ Bayt.com – The Middle East Leading Job Site ▪ Monster Gulf – The International Job Portal ▪ Gulf Talent – Jobs in Dubai and the Middle East • Find the handy ‘search’ option at the top of your homepage to search for the jobs that best suit your skills. • Select the job type from the first ‘Job Type’ drop-down menu, next, select the location from the second drop-down menu. • Enter any keywords you want to use to find suitable job vacancies. • On the results page you can search for part-time jobs only, full-time jobs only, employers only, or agencies only. Tick the boxes as appropriate to your search. • Search for jobs by: <ul style="list-style-type: none"> ▪ Company ▪ Category ▪ Location ▪ All jobs ▪ Agency ▪ Industry 	Week 21-26

Motivational Lectures

What is freelancing and how you can make money online - BBCURDU

<https://www.youtube.com/watch?v=9jCJN3Ff0kA>

What Is the Role of Good Manners in the Workplace? By Qasim Ali Shah | In Urdu

<https://www.youtube.com/watch?v=Qi6Xn7yKIIQ>

Hisham Sarwar Motivational Story | Pakistani Freelancer

https://www.youtube.com/watch?v=CHm_BH7xAXk

21 Yr Old Pakistani Fiverr Millionaire | 25-35 Lakhs a Month Income | Interview

<https://www.youtube.com/watch?v=9WrmYYhr7S0>

Success Story of a 23 Year - Old SEO Expert | How This Business Works | Urdu Hindi Punjabi

<https://www.youtube.com/watch?v=tIQ0CWgszI0>

Failure to Millionaire - How to Make Money Online | Fiverr Superhero Aaliyaan Success Story

<https://www.youtube.com/watch?v=d1hocXWSpus>

How To Propel Your Career- Women in Welding

https://www.youtube.com/watch?v=S_LuVnW-UdQ

Underwater Welder | I AM WOMAN | Lifetime

<https://www.youtube.com/watch?v=LZiIXOkE-rc>

SUGGESTIVE FORMAT AND SEQUENCE ORDER OF MOTIVATIONAL LECTURE.

Mentor

Mentors are provided an observation checklist form to evaluate and share their observational feedback on how students within each team engage and collaborate in a learning environment. The checklist is provided at two different points: Once towards the end of the course. The checklists are an opportunity for mentors to share their unique perspective on group dynamics based on various team activities, gameplay sessions, pitch preparation, and other sessions, giving insights on the nature of communication and teamwork taking place and how both learning outcomes and the student experience can be improved in the future.

Session- 1 (Communication):

Please find below an overview of the activities taking place Session plan that will support your delivery and an overview of this session's activity.

Session- 1 OVERVIEW
Aims and Objectives:
<ul style="list-style-type: none"> To introduce the communication skills and how it will work Get to know mentor and team - build rapport and develop a strong sense of a team Provide an introduction to communication skills Team to collaborate on an activity sheet developing their communication, teamwork, and problem-solving Gain an understanding of participants' own communication skills rating at the start of the program

Activity:	Participant Time	Teacher Time	Mentor Time
Intro Attend and contribute to the scheduled.			
Understand good communication skills and how it works.			
Understand what good communication skills mean			
Understand what skills are important for good communication skills			
Key learning outcomes:	Resources:		Enterprise skills developed:
<ul style="list-style-type: none"> Understand the communication skills and how it works. 	<ul style="list-style-type: none"> Podium Projector Computer 		<ul style="list-style-type: none"> Communication Self Confidence Teamwork

<ul style="list-style-type: none"> • Understand what communication skills mean • Understand what skills are important for communication skills 	<ul style="list-style-type: none"> • Flip Chart • Marker 	
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Schedule	Mentor Should do
Welcome: 5 min	Short welcome and ask the Mentor to introduce him/herself. Provide a brief welcome to the qualification for the class. Note for Instructor: Throughout this session, please monitor the session to ensure nothing inappropriate is being happened.
Icebreaker: 10 min	Start your session by delivering an icebreaker, this will enable you and your team to start to build rapport and create a team presentation for the tasks ahead. The icebreaker below should work well at introductions and encouraging communication, but feel free to use others if you think they are more appropriate. It is important to encourage young people to get to know each other and build strong team links during the first hour; this will help to increase their motivation and communication throughout the sessions.
Introduction & Onboarding: 20mins	Provide a brief introduction of the qualification to the class and play the “Onboarding Video or Presentation”. In your introduction cover the following: <ol style="list-style-type: none"> 1. Explanation of the program and structure. (Kamyab jawan Program) 2. How you will use your communication skills in your professional life. 3. Key contacts and key information – e.g. role of teacher, mentor, and SEED. Policies and procedures (user agreements and “contact us” section). Everyone to go to the Group Rules tab at the top of their screen, read out the rules, and ask everyone to verbally agree. Ensure that the consequences are clear for using the platform outside of hours. (9am-8pm) 4. What is up next for the next 2 weeks ahead so young people know what to expect (see pages 5-7 for an overview of the challenge). Allow young people to ask any questions about the session topic.
Team Activity Planning: 30 minutes	MENTOR: Explain to the whole team that you will now be planning how to collaborate for the first and second collaborative Team Activities that will take place outside of the session. There will not be another session until the next session so this step is required because communicating and making decisions outside of a session requires a different strategy that must be agreed upon so that everyone knows what they are doing for this activity and how. <ul style="list-style-type: none"> • “IDENTIFY ENTREPRENEURS” TEAM ACTIVITY • “BRAINSTORMING SOCIAL PROBLEMS” TEAM

	<p style="text-align: center;">ACTIVITY”</p> <p><i>As a team, collaborate on a creative brainstorm on social problems in your community. Vote on the areas you feel most passionate about as a team, then write down what change you would like to see happen.</i></p> <p>Make sure the teams have the opportunity to talk about how they want to work as a team through the activities e.g. when they want to complete the activities, how to communicate, the role of the project manager, etc. Make sure you allocate each young person a specific week that they are the project manager for the weekly activities and make a note of this.</p> <p>Type up notes for their strategy if this is helpful - it can be included underneath the Team Contract.</p>
<p>Session Close: 5 minutes</p>	<p>MENTOR: Close the session with the opportunity for anyone to ask any remaining questions.</p> <p>Instructor: Facilitate the wrap-up of the session. A quick reminder of what is coming up next and when the next session will be.</p>

SUCCESS STORY

S. No	Key Information	Detail/Description
1.	Self & Family background	<p>Mr. Nabeel from Lahore Punjab belongs to a agriculture family of Pakistan. Nabeel completed his Medical education from CMH Lahore. He always listened from his parents that they are not getting profit from their agriculture land and now they have decided to rent out their agriculture land. Nabeel who have a passion for successful agriculture started searching out for various latest business ideas for agriculture development. He has found citrus fruit processing business guidelines from SMEDA website that attract him a lot.</p> <p>To start this business he did not have experience and his education is also not supporting him. He decided to grasp technical knowledge about processing. Someone from his family referred NAVTTC citrus processing training from Sargodha. He devoted his six months for this training and started processing business in Lahore. In a very short time of almost 2 years his processed fruit took space in local as well as international market. Now he is growing citrus around 300 acres and earning a handsome capital.</p>
2.	How he came on board NAVTTC Training/ or got trained through any other source	Certification in Citrus Processing from Citrus Research Institute Sargodha(NAVTTC partner institute)
3.	Post-training activities	<p>Nabeel area of expertise is in citrus processing. Initially he processed his own farm fruit which was enough for local market. When Nabeel looks for international market he needs proper supply chain to feed international market. Nabeel used social media as a tool to find vendors and quality producers. he collected raw fruits from all Punjab and proceed them in his unit. Within a short period of time he got notable fame in gulf market.</p> <p>In starting year he simply processed fruit and export to other countries. In this working style he has faced many problems but with dedication and basic root knowledge he successfully defeated these hurdles. Soon he realize he needs to focus on value addition so he stated pulp manufacturing, jams, jelly, marmalade and pickle production in his processing unit with different bands name. Currently he his holding three processing units which feeding international and national market with reasonable figures. Nabeel success story enlighten</p>

		various growers and now they are converting their production farms into processing units.
4.	Message to others (under training)	Take the training opportunity seriously Try many ways to accomplish a same task Make Hard work pays in the end so be always ready for the same.

Note: Success story is a source of motivation for the trainees and can be presented in several ways/forms in a NAVTTC skill development course as under: -

1. To call a passed out successful trainee of the institute. He will narrate his success story to the trainees in his own words and meet trainees as well.
2. To see and listen to a recorded video/clip (5 to 7 minutes) showing a successful trainee Audio-video recording that has to cover the above-mentioned points.*
3. The teacher displays the picture of a successful trainee (name, trade, institute, organization, job, earning, etc) and narrates his/her story in the teacher's own motivational words.

* *The online success stories of renowned professional can also be obtained from **Annex-II***

Workplace/Institute Ethics Guide

Work ethic is a standard of conduct and values for job performance. The modern definition of what constitutes good work ethics often varies. Different businesses have different expectations. Work ethic is a belief that hard work and diligence have a moral benefit and an inherent ability, virtue, or value to strengthen character and individual abilities. It is a set of values-centered on the importance of work and manifested by determination or desire to work hard.

The following ten work ethics are defined as essential for student success:

1. Attendance:

Be at work every day possible, plan your absences don't abuse leave time. Be punctual every day.

2. Character:

Honesty is the single most important factor having a direct bearing on the final success of an individual, corporation, or product. Complete assigned tasks correctly and promptly. Look to improve your skills.

3. Team Work:

The ability to get along with others including those you don't necessarily like. The ability to carry your weight and help others who are struggling. Recognize when to speak up with an idea and when to compromise by blend ideas together.

4. Appearance:

Dress for success set your best foot forward, personal hygiene, good manner, remember that the first impression of who you are can last a lifetime

5. Attitude:

Listen to suggestions and be positive, accept responsibility. If you make a mistake, admit it. Values workplace safety rules and precautions for personal and co-worker safety. Avoids unnecessary risks. Willing to learn new processes, systems, and procedures in light of changing responsibilities.

6. Productivity:

Do the work correctly, quality and timelines are prized. Get along with fellows, cooperation is the key to productivity. Help out whenever asked, do extra without being asked. Take pride in your work, do things the best you know-how. Eagerly focuses energy on accomplishing tasks, also referred to as demonstrating ownership. Takes pride in work.

7. Organizational Skills:

Make an effort to improve, learn ways to better yourself. Time management; utilize time and resources to get the most out of both. Take an appropriate approach to social interactions at work. Maintains focus on work responsibilities.

8. Communication:

Written communication, being able to correctly write reports and memos. Verbal communications, being able to communicate one on one or to a group.

9. Cooperation:

Follow institute rules and regulations, learn and follow expectations. Get along with fellows, cooperation is the key to productivity. Able to welcome and adapt to changing work situations and the application of new or different skills.

10. Respect:

Work hard, work to the best of your ability. Carry out orders, do what's asked the first time. Show respect, accept, and acknowledge an individual's talents and knowledge. Respects diversity in the workplace, including showing due respect for different perspectives, opinions, and suggestions.